

REMARKS

Claims 1-5 are pending in the present application. Claim 4 has been amended as a result of this response. Applicants respectfully submit that independent claims 1 and 2 and dependent claims 3-5 stand in condition for allowance. No claims have been canceled and no new claims have been added.

I. Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-4

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being anticipated by Tanimoto et al (U.S. Patent No. 6,698,217 Tanimoto '217) in view of Shaw (U.S. Patent No. 4,497,185). This rejection is respectfully traversed.

Tanimoto '217 discloses a refrigeration apparatus, which can continue to operate as it is without inducing any degradation of performance of a compressor when one of multiple compressors is broken down. Specifically, the refrigeration apparatus includes a plurality of compressors connected with each other. When a breakdown detecting device detects breakdown of one of the compressors, the refrigeration operation is performed by actuating other compressors. However, Tanimoto '217 is not concerned with providing a liquid injection passageway that is connected directly to the oil return passageway.

Shaw discloses gas/vapor/helical screw rotary compressors with a working fluid cooling system (Abstract). The "compressor 12 includes a pair of intermeshed helical screw rotors as at 36, 37, which are rotatably mounted within parallel side intersection bores 38, 39...the bores are closed off at their ends by the end plates 44 and 46" (column 3, lines 10-16 and Figure 1). An oil line 68 "is shown as being branched at 68a to supply oil to multiple nozzles 70" the atomizing nozzles 70 are mounted to the inlet end plate 44 and "the nozzles 70 atomize the oil and spray it into the working fluid at suction pressure within the space between the rotor ends and the inlet end plate 44" (column 3 lines 41-59). The inlet of the compressor is flooded with a cloud type of cool atomized oil droplets uniformly dispersed within the suction vapor or gas entering

compressor suction port 22 through suction passage 48 (Column 3, lines 60-64). Therefore, it is clear that the oil is only being mixed with the liquid *inside* the compressor.

In Shaw, the oil and the liquid are connected to the compressor through separate lines 68a and 34 and are only mixed when they are *inside* the compressor. Shaw does not teach or disclose an oil or gas return passageway that is connected directly to said liquid injection passageway in which gas refrigerant in oil or gas return passageway is mixed with said liquid refrigerant *prior* to injecting into the suction side of said compressors.

In the Office Action of September 8, 2008, the Examiner states that Tanimoto '217 does not explicitly teach that the oil return passageway is connected directly to the liquid injection passageway and asserts that Shaw teaches this element. However, it is clear that Shaw specifically discloses that vapor or gas enters the compressor suction port 22 through suction passage 48 and then mixes with a cloud type of cool atomized oil droplets from oil line 68 and hence nozzles 70 *inside* the compressor. Shaw specifically teaches away from mixing oil and liquid *prior* to injecting the mixture into the suction side of said compressors.

Tanimoto '217 and Shaw fail to teach or disclose an "oil return passageway is connected directly to said liquid injection passageway in which gas refrigerant in said oil return passageway is mixed with said liquid refrigerant *prior* to injecting into the suction side of said at least one compressor" (claim 1). Also, Tanimoto '217 and Shaw fail to teach or disclose a "gas injection passageway is connected directly to said liquid injection passageway in which gas refrigerant in said gas injection passageway is mixed with said liquid refrigerant *prior* to injecting into the suction side of said at least one compressor" (claim 2).

Accordingly, for at least these reasons, claims 1 and 2 are clearly distinguishable over Tanimoto '217 in view of Shaw. Applicants submit that claims 3 and 4 are allowable at least by virtue of their dependency on claims 1 and 2. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Claim 5

Claim 5 was rejected under 35 U.S.C. § 103(a) as being anticipated by Tanimoto et al. (Tanimoto '217) in view of Shaw and further in view of Tanimoto et al (U.S. Patent Publication No. 2004/0112082 Tanimoto '082). This rejection is respectfully traversed.

Tanimoto '082 does not remedy the noted deficiencies of Tanimoto '217 in view of Shaw. Tanimoto '082 is only relied upon to teach dependent claim features. This reliance on Tanimoto '082 fails to make up for the deficiencies of Tanimoto '217 in view of Shaw discussed above with respect to independent claims 1 and 2. Therefore, the asserted combination of Tanimoto '217 in view of Shaw and in further view of Tanimoto '082 (assuming these references may be combined, which Applicants do not admit) fails to establish *prima facie* obviousness of any pending claim.

Applicants submit that claim 5 is allowable at least by virtue of its dependency on independent claims 1 and 2. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

II. CONCLUSION

All matters having been addressed in view of the foregoing, Applicants respectfully request the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.

Applicants' undersigned representative remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. If any point remains an issue in which the Examiner feels would be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

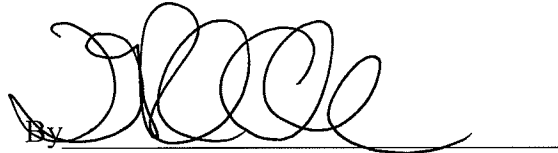
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Respectfully submitted,

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